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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,299	08/31/2001	Tore Nauta	NL 000484	2163

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[REDACTED] EXAMINER

DI GRAZIO, JEANNE A

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2871

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/944,299	NAUTA ET AL.
	Examiner Jeanne A. Di Grazio	Art Unit 2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 17 March 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-14 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1.) Certified copies of the priority documents have been received.
 2.) Certified copies of the priority documents have been received in Application No. _____.
 3.) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____.
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)
 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) Other: _____

DETAILED ACTION

Priority

Priority to EP-00203129.2 (Sept. 11, 2000) is claimed.

This Action is in response to Amendment of March 17, 2003 and replaces the First Office Action of Dec. 17, 2002.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numao (US 5,103,328) in view of Weber et al. (US 5,686,979).

Per claims 1 and 10: Numao has a display panel with a light transmissive substrate provided with electrodes at an area of pixels arranged in rows and columns and a second light transmissive substrate and liquid crystalline material between the two substrates (See Col. 3, Lines 20-36). In Numao, the device is pixilated and an LC switch is adapted for consecutively illuminating different rows of pixels (Col. 3, Lines 15-50 and SPEC at page 1 (discussing prior art US 5,103,328)). Numao also has a flat light source / backlight (Id.). Numao does not appear to have at least one reflective polarizer in an optical path between the backlight and display panel; however, Weber has a reflective polarizer between a backlight and LC panel (Please see Figure 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Numao in view of Weber for a switchable transreflector efficient in both a

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transmissive and reflective state that allows for use of at least 80% of available light for the LCD regardless of the light source and also for efficient use of a backlight and that improves battery life (Col. 4, Lines 9-16).

Per claim 11: Numao has an optical shutter in an optical path between an illumination system and light source (Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include this limitation to prevent flickering and thus thereby to improve display quality as taught in Numao.

Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numao (US 5,103,328) and Weber et al. (US 5,686,979) as applied to claim 1 above and further in view of Shinji (JP-62-119518).

Per claim 2: Numao does not appear to have a waveguide facing the display panel; however, Shinji has a waveguide plate (4) facing the display panel (PAJ). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Numao in view of Shinji for a high-definition device and for guiding output light (See Shinji).

Per claims 3-5: Numao does not appear to have first and second reflective polarizers as noted; however, Weber has a reflective polarizer between an exit face and display panel (Figure 1) and a second reflective polarizer between a switching element and display panel (Figure 1). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Numao in view of Weber for a backlight that can be used under normal lighting conditions and the improved battery life (Col. 4, Lines 9-16).

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Claims 6-~~8~~⁹ and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Numao (US 5,103,328) and Weber et al. (US 5,686,979) as applied to claims 1 and 2 above and

Shinji (JP-62-119518) as applied to claims 2-5 above and further in view of Nauta et al. (US 2002/0030772 A1).

Per claims 6 and 7: Numao does not appear to have a waveguide with means for coupling in light in a direction parallel to the exit face and an illumination system with a backlight and a waveguide of at least one entrance face for light while backlight light can be coupled in along the entrance face extending substantially transversely to the exit face and a selectively switchable light switch is situated between the backlight and the entrance face; however, claims 1 and 2 of Nauta recite all of these elements. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Numao in view of Nauta to: (1) facilitate coupling in of light into the optical waveguide (uniform light source) [0009] and (2) so that the backlight and light switch can be integrated into one assembly (reducing the number of parts and labor) and for alignment in only one dimension [0012] thus resulting in a simpler device.

Per claims 8 and 9: Numao does not appear to have a first reflective polarizer as noted; however, Weber has a first reflective polarizer between backlight and transparent conductive layer (Figure 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Numao in view of Weber for a backlight that is highly efficient, uses light efficiently in any light source and that reduces battery drain thereby prolonging battery life (Col. 4, Lines 9-16).

Per claims 12 and 13: Numao does not appear to have an optical shutter of a plurality of strip-shaped light transparent electrodes and that corrspond to one of the groups of rows or columns of pixels; however, Nauta has a substrate of strip-shaped electrodes (Claim 8, for example). It would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify Numao in view of Nauta for a backlight with a much smaller surface area than in conventional displays and for integration into one unit as well as for one dimensional alignment [0012].

Per claim 14: Numao does not appear to have a drive unit; however, Nauta has drive means for presenting signals to data and column electrodes for pixel writing and selective activation [0015]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Namao in view of Nauta for selectively activating groups of rows or columns of pixels for selective writing of pixels that can act as a scanning window that selectively blocks light and that reduces strain on the backlight and that improves battery durability.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeanne A. Di Grazio whose telephone number is (703)305-7009. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-8741 for regular communications and (703)746-8741 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Jeanne Andrea Di Grazio

Robert Kim, SPE

JDG
June 2, 2003

